CLAIM OBJECTIONS

Objection has been taken to claim 3 for defining substantial structures in relation to the further definition of the means plus function expression in claim 2 i.e. 'means for defining a flow path for said water', which according to claim 3 is to comprise the light source. This structure is illustrated in Figure 2 for instance, where the lamp defines one boundary surface of the water flow path. Reference for this objection was made by the Examiner to MPEP § 2181. MPEP § 2181 does not contain anything germane to this issue of whether it is permissible to further define a means plus function restriction by stating what physical components contribute to providing it in a preferred embodiment. We respectfully request that the Examiner withdraw this objection, or particularize the words in MPEP § 2181 that are alleged to be germane to the issue.

PRIOR ART REJECTIONS – CLAIMS 1 AND 23, ECKHOUSE AND BERRY

The combination of Eckhouse and Berry, as discussed below, is fatally flawed and Applicants request that the Examiner withdraw this rejection. The purpose of the Eckhouse apparatus is to cause heating. That is all Eckhouse is for. By causing heating it produces various therapeutic effects, depending on which skin or internal structures are targeted. All the wavelengths employed in Eckhouse are employed for their heating ability. This applies both to the infra-red and to the visible wavelengths. All the light applied using the Eckhouse apparatus (except for what is reflected from the skin) serves for heating. All of the energy of the light is converted to heat, because there is nowhere else for it to go.

There is no particular logic in Eckhouse for filtering out certain wavelengths just because they are 'heating wavelengths' when heating is the essential purpose of the apparatus. The situation in Berry is quite different. While the specific purpose of the Berry apparatus (in terms of the effect it is supposed to provide) is rather unclear, one can see that the apparatus is essentially for applying ultra-violet radiation to a wound or body cavity (See Berry, col. 1, line 10). There is no disclosure in Berry that the desired effect of the UV or any other radiation is to produce heating. In fact, Berry provides some implication that heat 'radiations' are not wanted. There is however no suggestion in Berry that the unwanted heat radiations have any special tendency to heat a skin surface more than any other structure. Ultra-violet light is of course different from longer wavelengths of light in that the energy contained in each photon is greater

and is so great that it can cause molecular changes. In particular, it can kill bacteria. Given the reference to wounds, this may well be what Berry has in mind.

It should also be noted that Berry is describing a device for internal treatment. When Berry refers to heat radiations, Berry is not referring to radiations having a particular tendency above others to heat skin. The Examiner asserts that 'Berry contemplates using the water for the alternative or additional purpose of blocking the transmission of heat to the surface of the tissue'. However, Berry actually says nothing about the surface of any tissue. Nothing is said in Berry about the need to keep 'heat radiations' away from the surface of tissue as opposed to its interior.

Again, the purpose of the Eckhouse apparatus is to cause heating. Figure 1 of Eckhouse discloses an apparatus for producing heating, either of the skin surface for evaporation of the skin (See Eckhouse, col. 7, line 34) or of deeper structures within the skin like blood vessels in vascular disorders. For both purposes however, heating of the target is the aim and object of Eckhouse. When treating deeper lying structures such as blood vessels, excessive heating of the skin surface will be undesirable and Eckhouse teaches that it may be avoided primarily by control of the pulse width (See Eckhouse, col. 7, lines 1-65). However, Eckhouse describes that one can measure the skin temperature via infra-red emission in real time, with the implication that if the temperature rises too high, one can terminate the treatment. There is no suggestion that if the temperature is too high, this might be handled by removing certain wavelengths.

Since the purpose in Eckhouse is heating, there is no teaching that wavelengths should be avoided on the basis of their general propensity to heat. According Eckhouse, most of the energy of the lamp is emitted in the range 300-1000 nm (infra-red starts at about 750 nm) (See Eckhouse, col.5, line 25). According to Eckhouse, in some procedures it is desirable to use most of the spectrum, with only the UV portion being cut off (See Eckhouse col.5, line 50). Removal of IR wavelengths for such 'certain procedures' is therefore clearly contraindicated and taught against.

For other procedures, Eckhouse indicates here that one may use 50-100 nm band width filters and low cutoff filters in the visible and UV portions of the spectrum. Again, there is no suggestion that infra-red needs filtering out because it is 'heating radiation' or at all. Examples of wavelength ranges to use are given in Eckhouse at column 11. Some of these are narrow, e.g. 520-650. If that were used, all the infra-red (>750) would be removed there, so a water filter would be redundant in that respect. Some ranges are broad, e.g. 600-1000. Most of

that is in the infra-red, so if it were thought that 'heat radiation' in Berry meant infra-red (as per the Examiner, page 3) then use of a filter to take it out would be seen by the Eckhouse reader to be wholly inappropriate.

As remarked above, there is nothing in Berry to suggest that infra-red wavelengths are more prone to heat a skin surface than other structures. The reader of Eckhouse would also not be given the impression that infra-red wavelengths were a particular problem as regards the heating of the skin surface. Indeed, the Eckhouse reader would understand the exact opposite. The degree to which applied light penetrates more deeply through the skin to heat deeper structures is dependent not only on the pulse width as described at column 7 of Eckhouse, but also on wavelength because this governs the degree of scattering referred to at column 7, line 2 of Eckhouse.

The Examiner has argued at page 4, final paragraph, that the removal of long wavelengths is not contraindicated for using the Eckhouse Figure 1 apparatus to provide deeper penetration, for example for the treatment of blood vessels using long pulses. However, it is common knowledge that short wavelengths are more scattered than longer ones, so that it is long wavelength light that can penetrate more deeply to reach blood vessels. It is the short wavelengths that need to be filtered out to prevent superficial skin heating by scattering close to the skin surface.

It may also be noted, that the areas below the skin that Berry is seeking to avoid heating by removal of 'heat radiation' are the very ones that Eckhouse would be trying to heat when using long pulses to treat deeper lying blood vessels. Accordingly, in our submission, the combination the Examiner seeks to make between Eckhouse' desire to avoid excessive heating of the skin surface and Berry's removal of heat radiation is completely artificial and erroneous.

The second line of argument advanced by the Examiner is that avoiding the application of infra-red radiation would avoid the risk of defeating the skin temperature monitoring device of Eckhouse as would supposedly occur if applied infra-red radiation were reflected into the monitoring device. This line of argument is pure speculation on the part of the Examiner and is contradictory to what Eckhouse actually teaches to be the case. Eckhouse indicates that the measurement of the temperature from emitted infra-red radiation is 'easy' (See Eckhouse, col.6, line 64). Removing part of the therapeutic light would hardly seem to be an obvious course of action to tackle a problem which is not disclosed to exist, or rather which is actually disclosed

not to exist. Thus, Applicants submit that the Examiner is equally incorrect to seek to link the temperature monitoring of Eckhouse with Berry's removal of heat radiation.

The Examiner contends on page 3 that he has 'established a proper motivation for combination and has also 'established a basis for obviousness under additional rationales, including simple substitution for one known element for another to obtain predictable results, use of known technique to improve similar device in the same way....' Applicants submit that one cannot reasonably describe the devices of Eckhouse Figure 1 and Berry as 'similar.' The device of Eckhouse is for heating skin surface or below surface structures to cause significant and visible change through the effect of heat, whether by evaporating the skin surface to remove blemishes thereon or by heat coagulating blood vessels below the surface. Berry shows a device which is for an undisclosed purpose to which heat is clearly inimical. Berry teaches that the preferred radiation for this undisclosed purpose is UV. Eckhouse teaches that the only form of radiation it is necessary to exclude and remove is UV. The teachings are polar opposites. Moreover, the 'simple substitution' of one known element for another to obtain a predictable result is not obvious unless the predictable result is one which the skilled reader would see as desirable in the context of the primary reference. Yet here, the filtering out of heating radiation is contrary to Eckhouse purpose of heating and contrary to his indication that wavelengths up to 1000 nm are specifically desirable.

Thus, for at least the above cited reasons, Eckhouse and Berry fail to disclose all of the elements recited in applicants' claimed invention. Further, Eckhouse and Berry fail to provide a basis to establish obviousness under additional rationales, including simple substitution for one known element for another to obtain predictable results, use of known technique to improve similar devise in the same way, applying a known technique to a known device ready for improvement to yield predictable results, obvious to try, or the presence of a teaching, motivation, or suggestion. Thus, reconsideration and withdrawal from this rejection, and allowance of claims 1 and 23 is respectfully requested.

PRIOR ART REJECTIONS – CLAIMS 1, 3 AND 8, ECKHOUSE, BERRY AND GUSTAFSSON

Claims 1-3 and 8 have been rejected as being unpatentable over Eckhouse in combination with Berry and Gustafsson. The Examiner alleges that it would be obvious to employ the water

cooled lamp of Gustafsson in an apparatus according to Eckhouse that has been modified already according to Berry. The combination with Gustafsson adds nothing to the merits of the rejection based on Eckhouse and Berry alone, and it contradicts what was found by the Board of Appeals.

The combination of Eckhouse, Berry and Gustafsson cannot stand unless it is obvious to combine Eckhouse with Berry in the first place. If the Examiner is basing the rejection on the following combination of having modified Eckhouse Figure 1 according to Berry for wavelength filtration reasons one then has an apparatus in which the lamp has water interposed between it and the light outlet, but without the water touching the lamp (as in Berry Figure 1), and one might increase the cooling effect of the water on the lamp by actually placing the lamp in the water as in Gustafsson Figure 3, that rejection cannot stand unless it is obvious to combine Eckhouse with Berry in the first place. For the reasons given above, that is clearly not obvious.

On the other hand, if the Examiner is basing the rejection on the allegation that it is obvious that Figure 1 of Eckhouse would benefit from water cooling (so that one might introduce this from Berry and then 'improve' on it from Gustafsson), that is clearly contrary to the findings of the Board, who found that by implication Eckhouse actually taught the opposite ('*the lack of disclosure of cooling water in connection with the embodiment depicted in Figure 1 would appear to indicate that no cooling is necessary in regard to the embodiment of Figure 1.*')

Thus, for at least the above cited reasons, Eckhouse, Berry and Gustafsson fail to disclose all of the elements recited in applicants' claimed invention. Further, Eckhouse, Berry and Gustafsson fail to provide a basis to establish obviousness under additional rationales, including simple substitution for one known element for another to obtain predictable results, use of known technique to improve similar devise in the same way, applying a known technique to a known device ready for improvement to yield predictable results, obvious to try, or the presence of a teaching, motivation, or suggestion. Thus, reconsideration and withdrawal from this rejection, and allowance of claims 1, 3 and 8 is respectfully requested.

PRIOR ART REJECTIONS – CLAIMS 10-15, 24 AND 25, ECKHOUSE, BERRY, GUSTAFSSON, ANDERSON AND OPTOELECTRONICS

Claims 10-15, 24 and 25, which are dependent upon claim 1, are allowable for at least the same reasons discuss above with respect to claim 1. The addition of Anderson and Optoelectronics does nothing to cure the deficiencies of Eckhouse, Berry and Gustafsson.

Thus, for at least the above cited reasons, Eckhouse, Berry, Gustafsson Anderson and Optoelectronics fail to disclose all of the elements recited in applicants' claimed invention. Further, Eckhouse, Berry, Gustafsson, Anderson and Optoelectronics fail to provide a basis to establish obviousness under additional rationales, including simple substitution for one known element for another to obtain predictable results, use of known technique to improve similar devise in the same way, applying a known technique to a known device ready for improvement to yield predictable results, obvious to try, or the presence of a teaching, motivation, or suggestion. Thus, reconsideration and withdrawal from this rejection, and allowance of claims 10-15, 24 and 25 is respectfully requested.

PRIOR ART REJECTIONS – CLAIM 18, ECKHOUSE, BERRY, GUSTAFSSON AND VASSILIADIS

Claim 18, which depends upon claim 1, is allowable for at least the same reasons discuss above with respect to claim 1. The addition of Vassiliadis does nothing to cure the deficiencies of Eckhouse, Berry and Gustafsson.

Thus, for at least the above cited reasons, Eckhouse, Berry, Gustafsson and Vassiliadis fail to disclose all of the elements recited in applicants' claimed invention. Further, Eckhouse, Berry, Gustafsson and Vassiliadis fail to provide a basis to establish obviousness under additional rationales, including simple substitution for one known element for another to obtain predictable results, use of known technique to improve similar devise in the same way, applying a known technique to a known device ready for improvement to yield predictable results, obvious to try, or the presence of a teaching, motivation, or suggestion. Thus, reconsideration and withdrawal from this rejection, and allowance of claim 18 is respectfully requested.

CONCLUSION

Having addressed each of the foregoing rejections, it is respectfully submitted that a full and complete response has been made to the outstanding Office Action and, as such, the application is in condition for allowance. Notice to that effect is respectfully requested.

Please charge any fees associated with the submission of this paper to Deposit Account Number **033975 (Ref. No. 011765-0254781)**. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Respectfully submitted,

PILLSBURY WINTHROP SHAW PITTMAN LLP
TYSON Y. WINARSKI
Reg. No. 41381
Tel. No. 703.770.7948
Fax No. 703.770.7901

Date: August 13, 2008
P.O. Box 10500
McLean, VA 22102
(703) 770-7900